

**SMALLER AND LOWER POWER STATIC MUX CIRCUITRY IN
GENERATING MULTIPLIER PARTIAL PRODUCT SIGNALS**

ABSTRACT

5 A multiplier circuit to receive a multiplier and a multiplicand comprises
at least one Booth encoder circuit to encode a plurality of multiplier bits into four
encoded outputs. The encoded outputs select Booth-multiply functions. The circuit
also includes a plurality of multiplexer circuits, one multiplexer circuit for each bit
of the multiplicand. The at least one of the plurality multiplexer circuits includes
10 four pass gates coupled to receive a multiplicand bit, a complement of the
multiplicand bit, multiplexed data from a next lower order multiplexer circuit and
the encoded outputs of the Booth encoder circuit outputs to provide one bit of a
partial product at a multiplexer output.

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